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A NEW SPECIES OF *PERITYLE* (ASTERACEAE, HELENIEAE) FROM ARIZONA

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ABSTRACT

Perityle ambrosiifolia, a new species from Greenlee County, Arizona, is described. Superficially *P. ambrosiifolia* resembles *P. lemmonii* with which it was included by previous monographers of the genus. Morphological evidence suggests that *P. ambrosiifolia* is related to *P. gilensis* or *P. saxicola*, or that it might have arisen through hybridization between rayed and discoid species of *Perityle*.

KEY WORDS: Asteraceae, Helenieae, *Perityle*, Arizona

Preparation of a treatment of *Perityle* for the forthcoming "Vascular Plants of Arizona" has revealed the existence of an undescribed taxon from southeastern Arizona in central Greenlee County, near the New Mexico border. At this time there is limited biological information regarding the new species, but we believe that distinctions are sufficient to warrant formal description, and thus to facilitate the inclusion of a more complete treatment of *Perityle* in the new flora of Arizona.

Perityle ambrosiifolia apparently was first recognized as a species by E.L. Greene. The name "*Laphamia ambrosiaefolia* Greene" is written on at least four sheets of *Davidson 341* and *341a* (see below). Three versions of spelling the epithet are represented on different sheets. Specimens of *Davidson 341* at DS and UC are labeled as "cotypes". We can not find any record, however, that the species as proposed by Greene was formally published. The specific epithet selected by Greene remains an appropriate choice because it is descriptive of the herbage of the new species.

Perityle ambrosiifolia E. Greene *ex* A.M. Powell & S.C. Yarborough, *sp. nov.* Figure 1. TYPE: UNITED STATES. Arizona:. Greenlee Co., With *Prosopis*, *Euphorbia*, on face of conglomerate cliff, above San Francisco River bank, S. Clifton, 5 Jun 1935, *B. Maguire, B.L. Richards, Jr. & T. Moeller 11787* (HOLOTYPE: NY!; Isotypes: GH!,UC!,US!).

Subfrutices usque ad 30 cm alti, plerumque villosi. Folia laminis 1.7-3.5 cm longis 1.7-3.0 cm latis duplicato-pinnatifidae segmentis lobatis fissis partitis vel divisis. Capitula discoidea vel flores paucos radii efferentes; phyllaria linearia vel lineari-lanceolata 6-9 mm longa 0.5-1.2 mm lata. Corollae disci tubulares vel anguste infundibulares. Pappus plerumque seta singulari valida 2.8-4.5 mm longa compositus, saepe corona squamarum brevium laciniatarum hyalinarum. Achenia 3-4 mm longa marginibus tenuicallosis ac breviciliatis.

Suffruticose perennial, 10-30 cm high, usually villous, occasionally pilose, often with glandular hairs. Stems brittle, densely leafy. Leaves opposite or alternate; petioles 5-10 mm long; lower leaf blades usually 1.7-3.5 cm long, 1.7-3.0 cm wide, tripartitely parted or appearing compound pinnatifid with the segments lobed, cleft, parted, or divided, upper leaves often smaller and less divided, the margins crenate. Heads discoid, or with a few ray flowers; peduncles 3-10 mm long; heads 7-10 mm high, 6-11 mm wide; involucres campanulate; phyllaries 14-20, linear to linear-lanceolate, 6-9 mm long, 0.5-1.2(-2) mm wide, villous. Ray flowers (the few observed) pistillate and fertile; ligules (color unknown) 3-5 mm long, 1.5-2.0 mm wide. Disk flowers 25-45; corollas yellow, 4.0-5.5 mm long, throat glandular, tubular to narrowly funnelform. Pappus usually of a single moderately stout, finely barbellate bristle 2.8-4.5 mm long (occasionally absent or with 2 or 3 subequal or unequal bristles) and often an additional crown of short, laciniate, hyaline scales. Achenes narrowly oblanceolate, with one or both surfaces rounded or angled; 3-4 mm long; margins thin-calloused, short ciliate; surfaces more or less dense with short, appressed hairs. Chromosome number unknown.

Additional specimens examined: UNITED STATES. Arizona: Greenlee Co., Turtle Mountain, South Smith Canyon, (Eagle Creek drainage) on north-facing rhyolite cliff face, elev. 4800-4900 ft, 12 Aug 1976, *S.B. Bingham 2462* (ARIZ,ASU); sandstone rocks (Frisco River), Clifton, 15 Oct 1900, *A. Davidson 341* (DS,NY,UC); in rock crevices, stem too brittle to survive any where else, Clifton, 30 Oct 1900, *A. Davidson 341a* (NDG); Eagle Creek, narrow riparian canyon and hillside, elev. 3650 ft, 27 Jun 1977, *W.L. Minckley and associates s.n.* (ASU); 9 mi NW of Morenci, pinyon-juniper grassland, elev. 4500 ft, 30 Jun 1977, *W.L. Minckley and associates s.n.* (ASU).

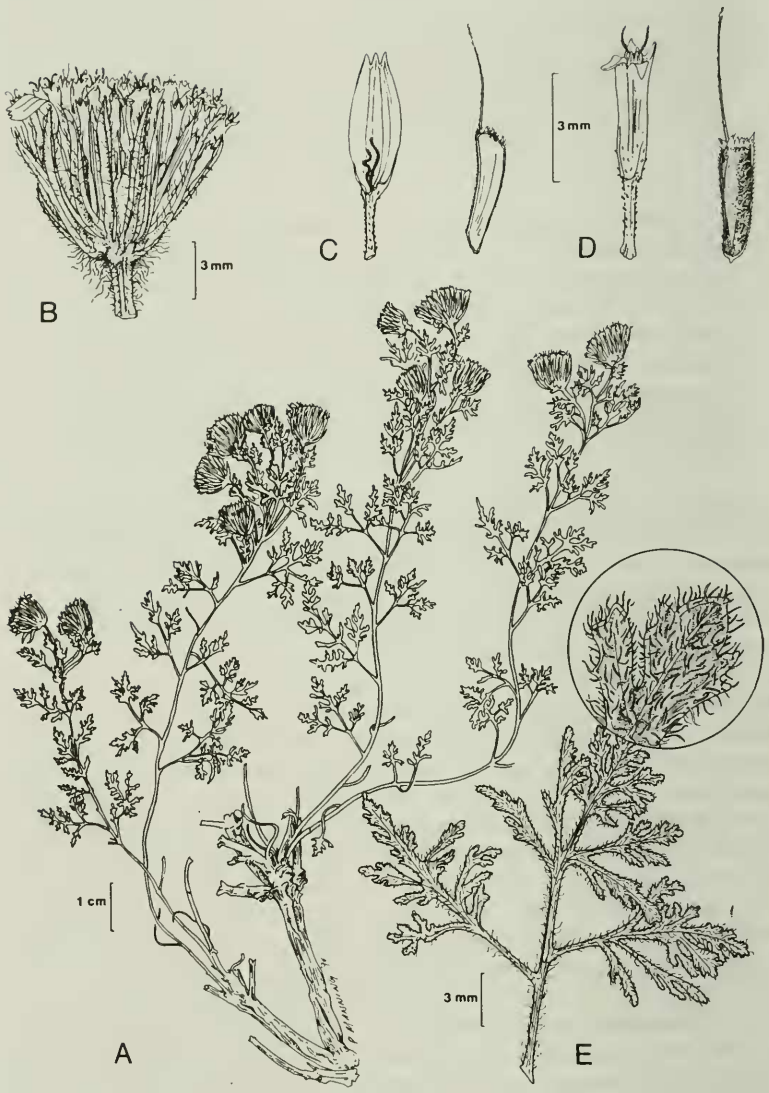

Figure 1. *Perityle ambrosiifolia*, (A) habit, (B) head, (C) ray corolla and achene, (D) disk corolla and achene, and (E) leaf and detail. A and E from *Maguire et al. 11787*; B-D from *Bingham 2462*.

Specimens of *Perityle ambrosiifolia* were examined by both Niles (1970) and Powell (1973) in their previous studies of *Perityle*. Both authors assigned the specimens to *P. lemmonii* (A. Gray) Macbr., a widespread and morphologically variable taxon of southcentral and southeastern Arizona and adjacent New Mexico. Niles (1970) made the alignment without comment, except to list "*Laphamia ambrosifolia* nom. nud." in synonymy. Powell (1973) commented about three collections of *P. ambrosiifolia* from Clifton, Arizona in tentative placement with *P. lemmonii*, referred specifically to the occurrence of ray florets in some heads of certain specimens, and he speculated about the origin of these populations that were not typical of the discoid *P. lemmonii*.

Our current evaluation of *Perityle ambrosiifolia* has included the examination of several additional collections of this taxon that were not available in the early 1970's. We have concluded that *P. ambrosiifolia* is distinct morphologically and geographically from *P. lemmonii*. In fact, further investigations may support our current belief that the similarity of *P. ambrosiifolia* to *P. lemmonii* is superficial, and that its true relationship is with *P. gilensis* Macbride or *P. saxicola* (Eastwood) Shinners, with which it shares characters of head size, phyllary shape, pappus structure, disk corolla size and shape, and the presence of ray flowers at least in some heads. The color of the ligules is not known but this information alone would be useful in predicting relationship with either the yellow-rayed *P. gilensis* or *P. saxicola*, or with some white-rayed member of the genus. It is possible that *P. ambrosiifolia* could have resulted from intrasectional hybridization (Niles 1970; Powell 1972) between *P. lemmonii* and *P. gilensis* or *P. saxicola*, or intersectional hybridization (Niles 1970; Powell 1970, 1972, 1974) between *P. lemmonii*, *P. gilensis*, or *P. saxicola* and *P. coronopifolia* A. Gray (with white rays). All of these taxa are geographically proximal and their hybrids would be expected to exhibit at least some characters of *P. ambrosiifolia* (Niles 1970). As pointed out by Powell (1973), *P. ambrosiifolia* also shares some features with *P. dissecta* (Torr.) A. Gray of trans-Pecos Texas and adjacent Chihuahua, México.

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